REMARKS

Claim 10 stands rejected under 35 U.S.C. §103 as being unpatentable over United States Patent No. 6,181,534 to Gill. Applicants respectfully traverse this rejection.

Applicants respectfully submit that the Gill reference fails to disclose or suggest all of the features of the present invention. More specifically, the Gill reference fails to disclose or suggest a magnetoresistive spin-valve sensor that includes, *inter alia*, "an antiferromagnetic layer adjacent to the pinned layer, opposite to the spacer layer," as now defined in amended independent Claim 10. Additionally, Applicants also respectfully submit that the Gill reference also fails to disclose or suggest a magnetoresistive spin-valve sensor that includes, *inter alia*, "a back layer, made of an AuCu or AgCu alloy, interposed between the magnetic layer and the specular layer, wherein said AuCu alloy has an atomic content of Au between 9.2 and 15.9 at % and said AgCu alloy has an atomic content of Ag between 11.0 and 28.3 at %," as now defined in amended independent Claim 10. Support for this portion of the amendment to Claim 10 can be found in the original specification on page 8 (line 37) to page 10 (line 36), and in Figures 5 and 6.

One example of an embodiment of the present invention defined in amended Claim 10 is shown in Applicants' Figure 1, which includes: antiferromagnetic layer 3, pinned magnetic layer 4, spacer layer 5, free magnetic layer 6, back layer 7, specular layer 8, and metal layer 9.

In contrast, the device of the Gill reference lacks the claimed "antiferromagnetic layer adjacent to the pinned layer, opposite to the spacer layer." Figure 9 of the Gill reference includes two pinned layers -- layer 310 and layer 312. However, neither of the layers that are both adjacent to these pinned layers and opposite to the spacer layers can be considered as the claimed antiferromagnetic layer. More specifically, neither layer 304 nor layer 308 of Gill is an antiferromagnetic layer. Further, there is no suggestion to make either layer 304 or layer 308 into an antiferromagnetic layer. Accordingly, as all of the features of Claim 10 are not disclosed or suggested in the Gill reference, Applicants respectfully request the withdrawal of this §103 rejection of Claim 10 under Gill for at least this reason.

Second, with regard to the specific alloys and formulations of the back layer now defined in Claim 10, the Gill reference fails to disclose or suggest either the specific alloys or the particular formulations of those materials. More specifically, the Gill reference fails to disclose or suggest that the back layer is made of either: (1) an AuCu alloy with an atomic content of Au between 9.2 and 15.9 at %; or (2) an AgCu alloy with an atomic content of Ag between 11.0 and 28.3 at %, as now defined in amended independent Claim 10. Instead, the Gill reference only discloses that layer 218 (which the Examiner equated with the claimed back layer) is made of any one of the following elements: copper, silver or gold (*see e.g.,* Gill, col. 5, lines 59-61; Gill, col. 8, lines 51-55). Even assuming *arguendo* that it would have been obvious to combine these elements into alloys, as asserted by the Examiner, Applicants respectfully submit that there is no disclosure or suggestion that would motivate

one of ordinary skill in the art to arrive at the specific formulations of the alloys defined in independent Claim 10. Accordingly, for this reason also, Applicants respectfully request the withdrawal of this §103 rejection of Claim 10.

Claims 1, 2, 5-8 and 10-13 stand rejected under 35 U.S.C. §103 as being unpatentable over United States Patent No. 6,181,534 to Gill in view of United States Patent No. 6,495,275 to Kamiguchi et al. Applicants respectfully traverse this rejection.

As mentioned above, Applicants respectfully submit that the Gill reference fails to disclose or suggest a magnetoresistive spin-valve sensor that includes, *inter alia*, "an antiferromagnetic layer adjacent to the pinned layer, opposite to the spacer layer," as now defined in amended independent Claim 10. This features is also now defined in amended independent Claim 1. Thus, the Gill reference fails to disclose or suggest the claimed antiferromagnetic layer, as now defined in Claims 1 and 10. Additionally, Applicants respectfully submit that the Kamiguchi et al. reference also fails to disclose or suggest this feature. In fact, the Kamiguchi et al. reference does not even appear to mention the term "antiferromagnetic." Accordingly, for at least this reason, Applicants respectfully request the withdrawal of this §103 rejection.

Additionally, Claim 1 has also been amended to recite that the back layer is "made of an AuCu or AgCu alloy, interposed between the magnetic layer and the specular layer, wherein said AuCu alloy has an atomic content of Au between 9.2 and 15.9 at % and said AgCu alloy has an atomic content of Ag between 11.0 and 28.3 at %," which is the same feature added to Claim 10, as discussed above. For the same reasons discussed above with

regard to the §103 rejection of Claim 10 under the Gill reference, Applicants assert that it would not have been obvious to modify the Gill reference to make the back layer of one of the specific alloys in the specific formulations defined in Claims 10 and 10. Further, Applicants also submit that the Kamiguchi et al. reference does not remedy this deficiency, nor was it relied upon for this feature. Accordingly, for this reason also, Applicants also respectfully request the withdrawal of this §103 rejection.

Thus, as all of the features of independent Claims 1 and 10 are not disclosed or suggested in either Gill or in Kamiguchi et al., as discussed above, Applicants respectfully request the withdrawal of this §103 rejection of independent Claims 1 and 10 and associated dependent Claims 2, 5-8, and 11-13.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. Should the Examiner be of the opinion that a telephone conference would aid in the prosecution of the application, or that outstanding issues exist, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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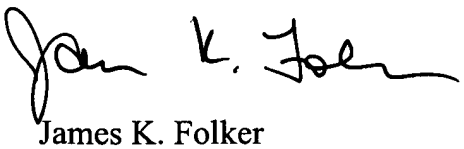
By 

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